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management consultants

21700 Oxnard Street
Suite 530
Woodland Hills, California 91367

July 3, 2007

Supervisor Michael D. Antonovich
500 West Temple Street
Room 869
Los Angeles, CA 90012

Re: Satellite Communications

Dear Supervisor Antonovich:

In my role as project manager for the County's Consolidated Fire Sheriff Communications System, I recently met with Anna Pembedjian from your office to discuss the use of satellite communications by the County's public safety agencies. Ms. Pembedjian expressed your interest in exploring the role satellite communications can play in public safety operations.

Satellite communications can be a valuable resource during natural or manmade disasters, as satellites provide basic communications capabilities that are independent of any County infrastructure. However, since many of the features necessary for public safety communications are not supported by satellite services, they should be viewed as a supplement to traditional tower-based terrestrial communications networks, rather than a replacement.

The advantages and disadvantages of satellite voice radio services are outlined below:

Satellite Radio Advantages

There are two significant advantages to satellite communications:

- **Wide Area Coverage** – Satellites provide very good outdoor coverage throughout large geographic areas. A single satellite can cover the entire United States.
- **Survivability** – Satellite services continue to operate during major disasters since satellites can function without ground-based towers or other infrastructure.

Satellite services have been used during national emergencies such as hurricane Katrina to coordinate emergency responses and resources. Historically, satellite radios have been used at the command staff level and have not been deployed to all first responders.

Satellite Radio Disadvantages

While satellites can play an important role in public safety communications, there are several significant limitations which make satellite radios impractical for day-to-day use:

- **Outdoor Use Only** – Satellite radios must have an unobstructed line-of-sight to the satellite in order to operate. Satellite radios will not work inside buildings nor outdoors around tall trees or buildings. This alone makes satellite radios unsuitable for daily use by the Fire and Sheriff's Departments.
- **Poor Form Factors** – Satellite radios are large and unwieldy; prior to use, portable radios require a large antenna to be unfolded and suitcase radios require an antenna to be oriented toward a satellite. This makes them cumbersome for use by a firefighter attacking a fire or a sheriff's deputy chasing a suspect.
- **Limited Number of Talkgroups** – Traditional public safety radios can support 800 or more communications channels or talkgroups, which enable first responders to communicate with a wide variety of departments and jurisdictions. Satellite radios typically support only 16 talkgroups.
- **High Costs** – Satellite costs are much higher than standard cell phone charges, with satellite costs in the range of one dollar per minute.

These limitations make satellite radios unusable for the day-to-day needs of first responders.

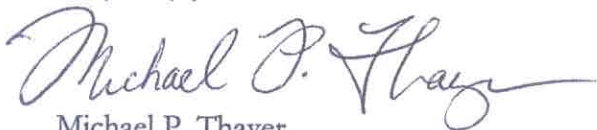
Summary

Terrestrial networks continue to be the primary mode of communications for the nation's first responders, but other technologies can play an effective role in an overall public safety communications strategy.

The County currently supplements its terrestrial radio networks with satellite communications to improve the ability to coordinate responses and resources. County departments should continue to monitor satellite and other technologies to identify the best mix of communications resources to ensure effective and reliable emergency response capabilities.

Please feel free to contact me at (310) 722-1745 if you have any questions.

Very truly yours,



Michael P. Thayer
President



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